Dredge 22 West side of Batiza Guyot

Location: 20°'14.32' N /156° 23.8'E (m) - 20°'13' N /156° 25'E (2200m).

Summary:

basalts, volcaniclastics, lime-sandstone, mollusks

Rock Groups:

Group I
cpx (1-2) ol (<1) basalt
1,2, 3, 4, 7, 8, 9=10=11

Group II
almost aphyric (< 1% ol, cpx)

Group III
Ankaramite (> 10 % cpx, 208 % ol
12, 16, 13, 17 (12% ol)
16 v. large cpx conc TS 12

Group IV
VCLs 15, 24 (welded agglutinate?)
29 heterolithol. breccia
11 AA-like brecciated flow top

Group V
ol, cpx (3-10 %) (gradational to group III)
14, 17, 18, 19, 22=23, 24, 25-26, 29

Group VI
Sediments:
27: coarse siltstone of predominantly volcanic grains, 10% opaques, 40% Qtz/Feldspar, also some
carbonate grains, and some large whole molluscs (clams).
Moderately indurated, cemented with calcite.
28: Packstone of well-rounded calcareous grains in a light-tan colred fine matrix.
The grains have concetric internal structures: are probably ooids. There are also
coral and foraminifera particles.
one good mollusk, probably came out of lithology 27.

Work Plans:

Thin sections: took 1, 12, 14
Dating:
Isotopes:
Sed's/carbonates:
Thin sections: 27, 28
look for fossils in 28, dateable mineral grains in 27.

Dredge Number	22	22	22	22	22	22	22
Sample Number	1	2	3	4	5	6	7
PETROGRAPHER	PEJ	PEJ	PEJ	PEJ	PEJ	PEJ	PEJ
Approximate Weight <g>	800	600	8000		500	800	
Mn crust thickness	<1	<1	<1	<1	0-2	<2	0-2
Palagonite rind thickness	0	0	0	0	0	0	0
ROCK TYPE:(PHENO-ROCK)	cpx/ol	cpx/ol	cpx/ol	cpx/ol	cpx	cpx	cpx/ol
STRUCTURAL	phyric	phyric	phyric	phyric	phyric	phyric	phyric
Mono-lithological?	y	y	y	y	y	y	y
Fresh Glass?	n	n	n	n	n	n	n
Rock Color	mgray	mgray	mgray	mgray	m gray	m gray	m gray
Groundmass Texture					microxtal	inter	inter
Ave Grain Size (m	<<.01	<<.01	<<.01	<<.01	<0.01	0.01	0.01
% alteration	?	?	?	?	40-60	>20	>10
Phenocryst Texture/Distr.	2	<1	2	2	<1	<1	3
Clinopyroxene %	1	<1	1	1	<1	<1	1.5
size (mm)	1.-2	1.-2	1.-2	1.-2	0.50	.2-.6	31782.00
shape	eu	eu	eu	eu	eu	eu	eu
alteration %	<30	<30	<30	<30	<50	>60	<25
alteration phase							?
Olivine %	1	<1	1	1	<1	<<1	1.5
size (mm)	1	0.5-1	1	1	<1	1 - 2	3-Jan
shape	eu/sub	eu	eu/sub	eu/sub	eu	eu	eu
alteration %	100	100	100	100	100	100	100
alteration phase							
plagioclase %							
size (mm)							
shape							
alteration %							
alteration phase							
amphibole %							
size (mm)							
shape							
alteration %							
alteration phase							
other %							
type							
size (mm)							
shape							
alteration %							
alteration phase							
Vesicles %	1	1	1	1	0	0	0
type							
size (mm)	.5-3	.1-5	.5-3	.5-3			
shape	rnd	rnd/irr	rnd	rnd			
total filling %	85	90	85	85			
filling-type	clay	cc/zeol	clay	clay			
%	100	80	100	100			
filling-type		clay					
%		20					
General appearance	relatively		relatively	relatively			
and/or other distinguishing	fresh		fresh	fresh			
characteristics	Thin-section!						

21	22	23	24	25			
8	9	10	11	12	13	14	15
PEJ	PEJ	PEJ	PEJ	PEJ	PEJ	PEJ	HC with
	1000	1000	300		600	2000	type 1 and
<1	<1	0-3	0 - 1		<1	<1	type 2
	0		0		0		clasts
ol/cpx	ol/cpx	ol/cpx	ol/cpx	o/cpx	cpx/ol	ol/cpx	
phyric	phyric	phyric	phyric	porphyr	phyric		
y	y	y	y	y	y		
n	n	n	n	n	n		
m gray	mgray	mgray	mgray	dk brown	mgray		
micrxtal	micrxtal	micrxtal	micrxtal	micrxtal			
0.01	0.01	0.01	0.01	<0.01	<<.01		
30-50				>40	?		
3	2	2	4	20	<1		
1	1	1	2	12	<1		
0.5-2	.5-2	.5-2	.5-2	1.-4	1.-2		
eu	eu	eu	eu	eu	eu		
20	<30	<30	<30	<30	<30		
2	1	1	2	8	<1		
.5-3	1.-3	1.-3	1.-3	1.-2	0.5-1		
eu	euh	euh	euh	eu	eu		
100	100	100	100	100	100		
				7			
				1 - 3			
				eu			
				>90			
2	0	0	0	15	15		
5-Feb				1.5-5	1.-5		
irr					rnd/irr		
100				30	40		
cc/zeo				zeol/cc	cc/zeol		
60				100	75		
clay					clay		
40					25		

D 23 NW slope Maloney Guyot

21°'03.3' N /157° 09.2'E (m) - 20°'03.0' N /157° 09.5'E (m).

Summary:

basalts,
volcaniclastics

Rock Groups:

Group I
aphyric, massive basalts (relatively fresh)
10 (large), 12, 14, 15, 16, 17, 18,

Group II
sparsely cpx phyric relatively dense (5% ves), (AB, Haw?)
cc in ves,
2, 3, 9, 13,

Group III
sparsely pyx phyric, massive basalt
A #1A: many smaller pieces from cobbles in conglomerate
B # 4 lge cpx up to 1 cm
C # 27

Group IV
moderately pyx phyric, massive basalt (± ol, ± plag)
5, 7, 28,

Group V
sparsely to moderately vesicular ankaramite
#'s 8, 19, 20, 21,

Group VI
sparsely hbl phyric, grey-green basalt
22 (fresh groundmass), 24, 25, 26,

Group VII
HC/conglomerate
#s 1, 29, 33, unnumbered
rounded to slightly angular basalt cobbles, including most lithologies described above, in red-orange HC matrix

Work Plans:
Thin sections: 3,5, 9, 8, 10, 12, 22, 28 took 5, 8, 9, 10
Dating: MP took slab of 9, 14, 24 (all), 25 (all)
Isotopes:
Alteration:

Dredge Number	23	23	23	23	23	23
Sample Number	1A	1B	2	3	4	5
PETROGRAPHER	PEJ	PEJ	PEJ	PEJ	PEJ	PEJ
Approximate Weight <g>						
Mn crust thickness	1-20 mm	1-20 mm	<1	1	1-10 mm	1-10 mm
Palagonite rind thickness						
ROCK TYPE:(PHENO-ROCK)	cpx	cpx	cpx/ol	cpx	cpx/ol	cpx
STRUCTURAL	porphyry	porphyry	porphyry	porphyry	porphyry	porphyry
Mono-lithological?	in hyaloclastite breccia					
Fresh Glass?	N	N	N	N	N	N
Rock Color	med. gray	med. gray	med. gray	dark gray	dark gray	med. gray
Groundmass Texture	holoxtln	microxtln	microxtln	microxtln	aphanitic	microxtln
Ave Grain Size (m	0.05	<0.01	<0.01	<0.01	<<0.01	<0.01
% alteration	30 (?)	30-60	<20	20	<20	10
Phenocryst Texture/Distr.	<1	3	2	<1	1	<1
Clinopyroxene %	<1	3	1	<1	1	<1
size (mm)	1	1-2 mm	1-10 mm	0.5-2	2-6 mm	1-2 mm
shape	eu	eu	eu	eu	eu	eu
alteration %	<40	<25	20	30-50	>30	80
alteration phase						
Olivine %			1		<<<1	
size (mm)			1-3 mm		0.1-0.5	
shape			eu		eu	
alteration %						
alteration phase						
plagioclase %						
size (mm)						
shape						
alteration %						
alteration phase						
amphibole %						
size (mm)						
shape						
alteration %						
alteration phase						
other %						
type						
size (mm)						
shape						
alteration %						
alteration phase						
Vesicles %	<1	5	3	5	1	5
type						
size (mm)	0.5-1	<3	1-7 mm	0.5-5	0.1-5	1-3 mm
shape	round	rnd/irreg	rnd/irr./elong	rnd/irreg	rnd/irreg	rnd/irreg
total filling %	50	40	40	60	30	90
filling-type	clay/zeo	clay/zeo	clay	cc/zeo	cc/zeo	cc/zeo
%	100	100	60	30	80	80
filling-type			cc/zeo	clay	clay	clay
%			40	70	20	20
General appearance						
and/or other distinguishing						
characteristics						

23	23	23	23	23	23	23	23
6	7	9	10	11A	11B	11C	12
PEJ	PEJ	PEJ	PEJ	PEJ	PEJ	PEJ	PEJ
		1000	2000	1500			100
0-3	0-3	<6	<2	0-30			0-0.5
cpx/ol	cpx/ol	ol	aphyric	aphyric bslt.	ol/plg porph	cpx porphyry	ol/cpx
porphyry	porphyry	porphyry	basalt	**Basaltic clasts in hyaloclasite breccia**			porphyry
		Y	Y				Y
N	N	N	N	N	N	N	N
dark gray	med. gray	m. gray	m. gray	dark gray	dark gray	dark gray	m. gray
aphanitic	microxtln	holoxtln	microxtln	same as #10	holoxtln	microxtln	holoxtln
<<0.01	<0.01	0.05	<0.01	same as #10	0.01	<0.01	0.05
<15	10 (?)	>10	>5	same as #10	>25	>10	
10	5	<1		same as #10	7	5	<1
6	3			same as #10		5	<1
0.5-5	1-2.5			same as #10		0.1	0.1-0.2
eu	eu			same as #10		eu	eu
	30(?)			same as #10		>30	
				same as #10			
4	2	<1		same as #10	7		<1
0.1-1.5	0.1-2	1-3 mm		same as #10	1-2mm		0.1-0.2
eu	eu	eu		same as #10	eu		eu
		100		same as #10	100		100
				same as #10			
				same as #10	3		
				same as #10	0.2-0.5		
				same as #10	eu		
				same as #10	>25		
				same as #10			
				same as #10			
				same as #10			
				same as #10			
				same as #10			
				same as #10			
				same as #10			
				same as #10			
				same as #10			
				same as #10			
				same as #10			
				same as #10			
				same as #10			
0	<1	4		same as #10			
				same as #10			
	6	1		same as #10			
	round	rnd/elong		same as #10			
	100	75		same as #10			
	clay	cc/zeo		same as #10			
	50	100		same as #10			
	rock fragments			same as #10			
	50			same as #10			

23	23	23	23	23	23	23	23
13	14	8	22	15	16	17	18
PEJ	PEJ	PEJ	PEJ	PEJ	PEJ	PEJ	PEJ
120	80	1500					
0-0.5	0-3	0-2	<1	0-3	<1	<1	0
ol	aphyric	ol/cpx	cpx porph	cpx	aphyric	aphyric	aphyric
porphyry	basalt	porphyry	clast in breccia				
Y	Y	Y	N	Y	Y	Y	Y
N	N	N	N	N	N	N	N
m. gray	l. gray	l. gray	m. gray	m. gray	m. gray	m. gray	m. gray
holoxtln	microxtln	microxtln	holoxtln	aphanitic	microxtln	aphanitic	holoxtln
0.03	<0.01	<0.01	0.05	<<0.01	<0.01	<<0.01	0.05
	<30	20 (?)	30-70	40	10-30%	?	>20
1		10	2	2	0	0	0
1		30	2	2	0	0	0
		2-5 mm	0.5-2	2-3 mm			
		eu	eu	eu			
		20	30-50	10			
1		10					
0.2-0.8		1-4 mm					
eu		eu					
100		100					
5	1	5	<1	<1	<1	0	0
1-4 mm	0.1	2-5 mm	0.2-1	1	1-3 mm		
rnd/irreg	irregular	irregular	elongate	rnd/elong	rnd		
30	100	70	100	100	70		
MnO	zeo/cc	zeo/cc	cc/zeo	cc/zeo	cc/zeo		
70	100	80	100	10	100		
clay		MnO					
30		20					

23	23	23	23	23	23	23	23
19	20	21	23	24	25	26	27
PEJ	PEJ	PEJ	PEJ	PEJ	PEJ	PEJ	PEJ
			100	200	100	100	80
0-4	0-2	0-30	<1	<2	<1	<1	<3
ol/cpx	Same as #19	ol/cpx	cpx	same as #23	cpx	same as #23	cpx
	Same as #19		porphyry	same as #23	porphyry	same as #23	porphyry
Y	Same as #19	Y	Y	same as #23	Y	same as #23	Y
N	Same as #19		N	same as #23	N	same as #23	N
dark gray	Same as #19	m. gray	green/gray	same as #23	gray	same as #23	brown-red
microxtln	Same as #19	aphanitic	microxtln	same as #23	Same as #23	same as #23	microxtln
<0.01	Same as #19	<<0.01	<0.01	same as #23	Same as #23	same as #23	<0.01
10(?)	Same as #19	15	?	same as #23	Same as #23	same as #23	>70
30	Same as #19	35	5	same as #23	Same as #23	same as #23	2
15	Same as #19	20	5	same as #23	Same as #23	same as #23	2
1-3 m	Same as #19	1-6 mm	0.5-2	same as #23	Same as #23	same as #23	0.5-3
eu	Same as #19	eu	eu	same as #23	Same as #23	same as #23	eu
10	Same as #19	<15	<40	same as #23	Same as #23	same as #23	50
	Same as #19			same as #23	Same as #23	same as #23	
	Same as #19			same as #23	Same as #23	same as #23	
	Same as #19			same as #23	Same as #23	same as #23	
	Same as #19			same as #23	Same as #23	same as #23	
	Same as #19			same as #23	Same as #23	same as #23	
	Same as #19			same as #23	Same as #23	same as #23	
	Same as #19			same as #23	Same as #23	same as #23	
	Same as #19			same as #23	Same as #23	same as #23	
	Same as #19			same as #23	Same as #23	same as #23	
	Same as #19			same as #23	Same as #23	same as #23	
	Same as #19			same as #23	Same as #23	same as #23	
	Same as #19			same as #23	Same as #23	same as #23	
	Same as #19			same as #23	Same as #23	same as #23	
	Same as #19			same as #23	Same as #23	same as #23	
	Same as #19			same as #23	Same as #23	same as #23	
	Same as #19			same as #23	Same as #23	same as #23	
	Same as #19			same as #23	Same as #23	same as #23	
	Same as #19			same as #23	Same as #23	same as #23	
	Same as #19			same as #23	Same as #23	same as #23	
	Same as #19			same as #23	Same as #23	same as #23	
	Same as #19			same as #23	Same as #23	same as #23	
	Same as #19			same as #23	Same as #23	same as #23	
0	<1	1	0	same as #23	Same as #23	same as #23	1
				same as #23	Same as #23	same as #23	
	2	4		same as #23	Same as #23	same as #23	0.1-1
	irreg	round		same as #23	Same as #23	same as #23	round
	10	10		same as #23	Same as #23	same as #23	0
	cc/zeo	clay		same as #23	Same as #23	same as #23	
	100	100		same as #23	Same as #23	same as #23	
				same as #23	Same as #23	same as #23	
				same as #23	Same as #23	same as #23	
				same as #23	Same as #23	same as #23	
				same as #23	Same as #23	same as #23	

23	23	
28	29	
PEJ	carbonate	
120	breccia	
<3	w/ same clast	
	types as other	
cpx	described	
porphyry	samples from	
Y	this dredge	
N		
dark gray		
microxtln		
<0.01		
<30		
3		
3		
1-4 mm		
eu		
40		
0		

Tunes Dredge 24 Markus-Wake Seamounts, W. Pacific

Location:: 20°'52.1' N /156° 09.8'E (m) - 20°'02.16' N /156° 10.8'E (m).

Summary:
Basalt
small amount of limestone

Rock Groups:

Group I
sparsely-cpx phyric slightly vesicular AOB (hawaiite?)(< 1% ol phen) # 1

Group II
moderately cpx+ol phyric massive basalt (3-8%, ol ± =cpx %)
some relatively fresh, (4, 10)
#s: 4, 5, 6,.7, .8, 10

Group III
highly ol-phyric, massive basalt with traces of cpx: # 11, 12, 15

Group IV
highly ol-phyric, massive basalt with traces of cpx: samples 9, 13

Group V
picrites (variously altered): # 14, 16-24

Group VI
rounded basalt cobbles in red-brown volcaniclastic breccia, most cobbles sparsely cpx phyric, massive basalts

Group VII
Limestones:
Partially phosphatized fossiliferous packstones with coarse shell debris, probably mollusc fragments: S1
Large irregular shaped clast with porous, rectangular-cellular structure: may be a rudist-lid.
if so: probably Upper Cretaceous (Cenomanian or younger): S2
Recrystallized coral, and well indurated calcareous sandstone with abundant coral debris and algal lumps.
Coarse calcareous sandstone with abundant mollusc debris, coated grains, possibly. forams, coral.

Work Plans:
Thin sections: 1, 4, 10, 15, 9 one of 21, 22, 24 (took 1, 21)
Dating: 1, 2 A, B, C 4, (to MP)
Isotopes: cpx separates in 1, 4, 10, 21, 15, 24, 22, 9
Carbonates:
Thin sections: S4, S6, S7, S10,S12.
Fossil identifications: S2

Dredge Number	24	24	24	24	24	24
Sample Number	1	2	4	5	6	7
PETROGRAPHER	KMM	KMM	KMM	KMM	KMM	KMM
Approximate Weight <g>	1500		2000	500	700	500
Mn crust thickness	1.	"undescribed,	<1	<1	1	3
Palagonite rind thickness	0	various small	0	0	0	0
ROCK TYPE:(PHENO-ROCK)	cpx/ol	rounded beach	cpx/ol	cpx/ol	cpx/ol	cpx/ol
STRUCTURAL	porphyry	cobbles"	porphyry	porphyry	porphyry	porphyry
Mono-lithological?	Y		Y	Y	Y	Y
Fresh Glass?	N		N	N	N	N
Rock Color	gray		gray	gray	gray	gray
Groundmass Texture	aphanitic		microporph.	microporph.	microporph.	Intersertal
Ave Grain Size (m	<<0.01		0.1 (Pheno)	0.1 (Pheno)	aphanitic	0.01
% alteration	5		<5	5	???	10
Phenocryst Texture/Distr.	10		12	15	5	7
Clinopyroxene %	2		5	7	2	2
size (mm)	0.1-1		1-3 mm	2-6 mm	1-3 mm	1-4 mm
shape	eu		eu	eu	eu	eu
alteration %	10		<10	0	0	30
alteration phase	z					zeo
Olivine %	7		7	8	3	5
size (mm)	0.5		0	2±	1-3 mm	0.5-3
shape	eu		eu	eu	eu	eu
alteration %	100		100	100	100	100
alteration phase	ox, smect		smect, ox	smect, ox	smect, ox	smect, ox
plagioclase %	in groundmass		in groundmass	in groundmass	phenos in gm	phenos in gm
size (mm)					0.1	
shape					eu	
alteration %					?	
alteration phase						
amphibole %						
size (mm)						
shape						
alteration %						
alteration phase						
other %						
type						
size (mm)						
shape						
alteration %						
alteration phase						
Vesicles %	1		0	1	0	?
type	void, fissure			voids		voids & seg ?
size (mm)	0.5-10			<3		
shape	irr.			irr.		
total filling %	15			90		80
filling-type	zeo			smect		smect
%	10			100		75
filling-type	smect					zeo
%	5					25
General appearance						
and/or other distinguishing						
characteristics						

24	24	24	24	24	24	24	24
8	9	10	11	12	13	14	15
KMM	KMM	KMM	BML	BML	BML	BML	BML
500	800	1200	1500	200	150	1500	6000
<10	<1	<1	0-0.1	0-0.5	0-0.5	0-0.1	0-0.1
0	0	0	0	0	0	0	0
cpx/ol	cpx/ol	cpx/ol	ol	ol	ol-cpx	ol-cpx	ol-cpx
porphyry	porphyry	porphyry	phyric	phyric	phyric	phyric	phyric
Y	Y	Y	Y	Y	Y	Y	Y
N	N	N	N	N	N	N	N
gray	gray	gray	l. gray-ornge	rusty	l. gray-ornge	l. gray-ornge	dark gray
intersertal	intersertal	aphanitic	inter	inter ?	inter	inter	inter
0.02	0.05	?	<0.01	?	0.01	0.01	0.01
10	10	10	65	95	60	70	50
10	20	11	6	10	12	10	6
4	2	4-10%	0	0	1	2	tr
0.5-2	0.5	0.5-15			2-5 mm	1-2 mm	0.5-1 mm
eu	eu	eu			sub	eu	sub
15	50	60			10	30	20
zeo	zeo	zeo					
6	18	1-7 %	6	10	11	8	6
1-5 mm	1-6 mm	0.5-3 mm	1-5 mm	1-4 mm	1-5 mm	1-4 mm	1-4 mm
eu	eu	eu					
100	100	100					
smect	smect (ox)	smect, ox					
phenos in gm	phenos in gm	0?					
		?????					
		chromite or sp					
		<0.1					
		eu					
		?					
0	3	0	2	5	1	3	2
	miarole						
	5		1-5 mm	0.5-2	1-2 mm	0.1-4	1-10+
	irreg.		irregular	irregular	irregular	irregular	irregular
	100		95	100	100	95	95
	smect		clay	clay	clay	clay	zeo
	100		100	100	100	90	80
						calcite	clay
						10	20

24	24	24	24	24	24	24	24
16	17	18	19	20	21	22	23
BML	BML	BML	BML	BML	BML	BML	BML
1000	5000	800	900	1500	3000	2500	1500
0-0.1	0	0	0-0.1	0-0.1	0-2 mm	0	0-2 mm
0	0	0	0	0	0	0	0
ol-cpx	ol-cpx	ol-cpx	ol-cpx	ol/cpx	ol/cpx	ol/cpx	ol/cpx
phyric	phyric	phyric	phyric	phyric	phyric	phyric	phyric
Y	Y	Y	Y	Y	Y	Y	Y
N	N	N	N	N	N	N	N
dark gray	rusty	l. gray	l. gray	lt. gray	lt. gray	dark rust	lt. gray
inter	inter	inter	inter	inter.	inter.	inter.	inter.
0.05	?	0.01	<0.01	0.01	0.01	-	0.01
85+	100	60	50	50	20-Feb	95+	55
5	10	3	13	7	20	10	20
1	2	2.5	1	1	3	2	5
1-5 mm	0.5-2	0.5-2	2-6 mm	2-8 mm	2-6 mm	2-6 mm	0.5-3
sub	eu	sub	sub	sub	sub	sub	sub
20	30+	40	20	30	30+	20	25
4	8	0.5	12	6	17	8	15
1-4 mm	1-4 mm	0.5-3	1-4 mm	1-4 mm	1-8 mm	1-8 mm	1-7 mm
				sub	sub	sub	sub
				100	100	100	100
1	2	1	1	1	0	5	5
1-3 mm	1-5+	1-2 mm	1-3 mm	1		2-10+	2-10+
irregular	irregular	irregular	irregular	rnd		irr	irr
100	85	100	100	100		95	90
clay	clay	clay	clay	clay		clay	clay
100	100	100	100	100		100	90
							calcite
							10

24	24						
24	25						
BML	BML						
6000	6000						
0-1 mm	0-1 mm						
0	0						
ol/cpx	ol/cpx						
phyric	hyaloclastite						
Y	Y						
N	N						
lt. gray	rusty						
inter.							
0.01	-						
60	100						
15	2						
2	1						
2-5 mm	0.3-1						
sub	sub						
20	10						
12	1						
1-5 mm	0.5-2						
sub	sub						
100	100						
5	1						
1-6 mm	0.5						
irr	round						
100	20						
clay	cc/zeo						
90	100						
calcite							
10							

Tunes 06 Dredge Summaries

Dredge 25 Batiza/

Location: 20°26.94'N/155° 55.25'E-20° 27.06'/155° 55.17'E

Summary:

1/4 basalts/3/4 Mn crusts, one extremely large sample (#1)
big pipe vesicles in spl # 3, overall vesicular nature suggests subaerial nature.
large blovk of pink, fine-grained well indurated partially phosphatized pelagic limesone with abundant volcanic lithic fragments. Small pebbles of pelagic chalk.

Rock Groups:

Group I

ol, cpx (2-5%), vesicular basalts (with little plag)
#.s: 1, 2, 3, 4, 5, 15, 16, 28,

Subgroup: 6, 7, 8, 9 with particularly large ol phenocrysts.

Group II

ol (3-5%) phyric (3-5%) vesicular basalt (±trace of plagioclase microphenocrysts)
#s: 12, 13, 14, 17, 18

Group III

single specimen:
ol (7%) and cpx (trace) phyric massive basalts (# 10, 11)

Work Plans:

Thin sections: took 3, 12, 10

Dating: some plag phyric (#s 2, for Malcolm)
Isotopes:
Alteration: 23 HC (Kari)
Manganese Crusts: undescribed samples (often not labelled inside wet pack): 8-11, 22, 23, 24.

Dredge Number	25	25	25	25	25	25	25	25
Sample Number	1	2	3	4	5	6	7	8
PETROGRAPHER	BML	BML	BML	KMM	PEJ	PEJ	PEJ	PEJ
Approximate Weight <g>	5000+	400	1000	600	750	750	1000	700
Mn crust thickness	10.	1-Jan		1	0-10	4	0-20	0
Palagonite rind thickness	0	0	0	0	0	0	0	0
ROCK TYPE:(PHENO-ROCK)	cpx/ol	cpx-ol-pl	cpx-ol-pl	cpx-ol	cpx/ol	ol/cpx	ol/cpx	same as #7
STRUCTURAL	phyric	phyric	phyric	porph	porph	porph	porph	
Mono-lithological?			Y	Y	Y	Y	Y	Y
Fresh Glass?			N	N	N	N	N	N
Rock Color	brown	dark brown	dark gray	gray	dark brown	dark brown	dark brown	dark brown
Groundmass Texture	inter	inter	inter	inters.	aphanitic	aphanitic	aphanitic	aphanitic
Ave Grain Size (mm	0.05	0.01	0.5	0.1	?	?	?	
% alteration	80	70	50	30	100	100	100	
Phenocryst Texture/Distr.	5	2	3	8	5	5	4	
Clinopyroxene %	3	2	1	3	2	2	1	
size (mm)	1-2 mm	1-2 mm	1-3 mm	1-4 mm	0.5-1.5	0.2-1	1.5-3	
shape	eu	sub	sub	eu	eu	eu	eu	eu
alteration %	10	15	20	20	<20	<20	~25	
alteration phase								
Olivine %	2	tr	2	5	3	3	3	
size (mm)	0.5-2	0.5-3	0.5-2	0.5-5	1-2 mm	0.5-4	1-6 mm	
shape	sub	sub	sub	eu/sub	eu	eu	eu	eu
alteration %	100	100	100	100	100	100	100	100
alteration phase				ox, sm				
plagioclase %		tr	tr					
size (mm)		10	8-12 mm	in gm				
shape		eu	sub					
alteration %		5	10					
alteration phase		?	?					
amphibole %								
size (mm)								
shape								
alteration %								
alteration phase								
other %								
type								
size (mm)								
shape								
alteration %								
alteration phase								
Vesicles %	10	60	7	15	30	35	50	50
type								
size (mm)	0.5-1	0.5-2	0.5	0.5-2	0.2-1	0.3-1.2	2-7 mm	2-7 mm
shape	rnd	rnd	rnd	rnd	rnd	rnd	rnd	rnd
total filling %	10	0	5	50	35	5	5	5
filling-type	zeol		clay	clay	cc/zeo	cc/zeo	cc/zeo	cc/zeo
%	100		100	20	100	80	80	80
filling-type				cc		clay	clay	clay
%				100		20	20	20
General appearance								
and/or other distinguishing								
characteristics								

25	25	25	25	25	25	25	25	25	25
9	10	11	12	13	14	15	16	17	18
PEJ	PEJ	PEJ	PEJ	PEJ	PEJ	PEJ	PEJ	PEJ	PEJ
800	300								
<1	≈1	<2	1-3 mm	2-3 mm	0-4	4-20 mm	1	0	2
0									
ol/cpx	ol/cpx?	ol micro-	ol	ol		ol/cpx/pl	ol/cpx	ol	ol
porph	phyric	phyric	porphyry	porphyry	porphyry	porphyry	porphyry	porphyry	porphyry
Y	Y								
N	N								
dark brown	lt. brown	gray-tan	brown	brown	brown	dark gray	brown	brown	tan-brown
aphanitic	holoxtln	holoxtln	holoxtln	holoxtln	holoxtln	aphanitic	microxtln	intersertal	?
	0.05	0.05	0.05	0.05	0.05	<<0.01	0.01	0.03	?
>90	>40	>25	>50	>75		>90	>90	>60	100
7	7	2-5 %	3	5		1	2.5	4	2
<1	<<1					3	3.5		
≈1	0.2					2-3 mm	1-3 m		
eu	sub/eu					eu	eu		
>50	≈30(?)					<30	<20		
7	7	2-5%	3	5		1	2.5	4	2
1-5 mm	0.5-3	0.2-1	0.5-2	1-3 mm		1-2 mm	1-2 mm	1-2 mm	1.5-2
eu	sub/eu	sub/eu	eu	eu	eu	eu	eu	eu	eu
100	100	100	100	100	100	100	100	100	100
	in gm	in gm	in gm			1	in gm	1	
						<1 mm		0.1-1	
						eu		eu	
						?		≈10 (?)	
35	0	10	3	25	10	25	30	8	10
1-3 mm		0.5-3	1-3 mm	1-2 mm	≈1	1-2 mm	1-2 mm	1-2 mm	1-2 mm
rnd		rnd/irreg	round	round	round	round	round	round	round
5		40	25	20	10	5	10	10	100
cc/zeo		cc/zeo	clay	clay	clay	clay	clay	clay	clay
70		40	70	80	100	100	100	100	60
clay		clay	MnO	cc/zeo					MnO
30		60	30	20					20
									cc/zeo
									20

25	25	25	25	25	25	25	25	25	25
19	20	21	22	23	24	28			
PEJ	PEJ					KMM			
1000	500	400	300	1000	800	3000			
1-30 mm		0-1	0-1	0-3	0-5				
	chunk of	Hyaloclastite breccias comprised of basalt cobble				0			
aphyric cobbles	limestone	and fragments of types already described				ol-cpx			
in hyaloclastite	and					porphyry			
N	phosphate					N			
N						N			
gray-tan						dark gray			
holoxtln						ahanitic			
0.1						<0.01			
?						30			
0						3			
						2.5			
						0.5			
						eu			
						<10			
						0.5			
						<0.5			
						sub			
						0-100			
						tr			
						<0.5			
						eu			
						≈50			
						1			
						xenoliths			
						diops.			
						ol			
						chromite ?			
						altered			
10						35			
						v			
1-3 mm						1			
round						round			
100						50			
clay						cc			
100						?			
						zeo			
						100			

25	25	25	25	25	25	25	25	25	25
19	20	21	22	23	24	28			
PEJ	PEJ					KMM			
1000	500	400	300	1000	800	3000			
1-30 mm		0-1	0-1	0-3	0-5				
	chunk of	Hyaloclastite breccias comprised of basalt cobbles				0			
aphyric cobbles	limestone	and fragments of types already described				ol-cpx			
in hyaloclastite	and					porphyry			
N	phosphate					N			
N						N			
gray-tan						dark gray			
holoxtln						ahanitic			
0.1						<0.01			
?						30			
0						3			
						2.5			
						0.5			
						eu			
						<10			
						0.5			
						<0.5			
						sub			
						0-100			
						tr			
						<0.5			
						eu			
						≈50			
						1			
						xenoliths			
						diops.			
						ol			
						chromite ?			
						altered			
10						35			
						v			
1-3 mm						1			
round						round			
100						50			
clay						cc			
100						?			
						zeo			
						100			